



# WETLAND WILDLIFE HABITAT MANAGEMENT

(644)

Biology Job Sheet #5

## Natural Resources Conservation Service (NRCS) - Minnesota

### WHAT IS WETLAND WILDLIFE HABITAT MANAGEMENT?



The purpose of wetland habitat management is to improve habitat for water dependent wildlife such as migratory shorebirds, waterfowl, reptiles, amphibians and aquatic mammals. Shallow water bodies are from 6 inches to 6 foot deep with the majority of the water less than 18 inches. Proper management can increase and maintain desirable foods for waterfowl and other species of wildlife. See NRCS practice standard WETLAND WILDLIFE HABITAT MANAGEMENT (644) for specific recommendations.

Wetlands may be permanent or seasonal depending on the objectives of the development. Seasonal developments are very beneficial for many migratory species. Although there is no minimum size limit for a shallow water development, areas greater than one acre will provide more diverse habitats and be more beneficial for many wildlife species.

### FEDERAL, STATE AND LOCAL LAWS

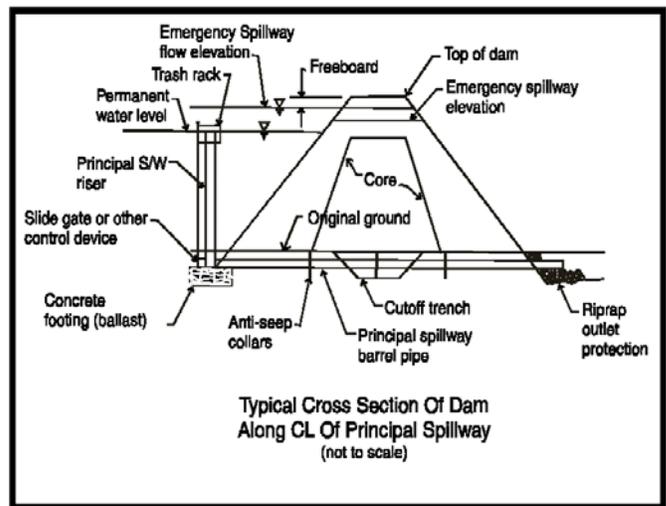
Wetland programs such as the Clean Water Act, wetland provisions of the USDA Farm Bill, the Minnesota Wetlands Conservation Act or local township regulations may apply to private landowners.

All necessary permits must be acquired by the landowner before construction begins.

### SHALLOW WATER DEVELOPMENT AND MANAGEMENT OF WETLAND HABITAT

**Impoundments:** Shallow water developments are usually constructed through a combination of dikes, small dams and water control structures. Generally, a site should be selected that maximizes the interspersion of habitat types for the greatest diversity of wildlife species. Consider the effects of the management objectives on non-target species including at risk species.

The developed area should be at least ten acres in size. Larger areas will attract and hold more wetland wildlife species. Side slopes should range from 8:1 to 16:1 unless muskrat habitat is the objective in which case the side slopes could be up to 3:1.



Shorelines should be irregular in shape. For waterfowl purposes, at least 50 percent of the surface water area should be less than 18 inches. For reptiles, amphibians, and aquatic mammals, a maximum of 20-30 percent of the surface water area will have water depths from 3 to 6 feet deep with the remainder below 3 feet deep. Topsoil should be re-spread over disturbed areas in the pool to provide a seed source for vegetation.

Impoundments that have surface water entering them will have an emergency spillway installed to insure that the water is safely controlled. Various types of water control structures are available and should be selected based on the type of wetland developed and the level of management that is anticipated. Because of the importance of timing, consult with an NRCS, USFWS, or MDNR biologist for a recommended plan before attempting a drawdown. See *Fish and Wildlife Habitat Management Guidesheets - "Shallow Water Management For Dabbling Waterfowl" and "Shorebirds"*, for information on moist soil management.

### Islands For Nesting Waterfowl and Shorebirds

Island (nesting and submerged) construction should be restricted to semi-permanent and permanent wetlands >10.0 acres in size providing an adequate season long open-water barrier to mammalian predators.

Islands must be within 1.0 mile of a wetland complex containing both seasonal and semi-permanent wetlands.

Develop 1.0 acre of constructed islands per square mile of pothole habitat. Where sufficient habitat exists, construct 2-3 islands totaling 1.0 acre. Islands should be separated by at least 300 feet.

Islands are not appropriate where the normal water depth exceeds 3-4 feet.

Islands will be located a minimum 400' from shore, and away from existing emergent vegetation. Constructed islands shall have the following characteristics:

- Islands should be built in an oval, kidney, or peanut shape with natural rounded outlines.
- Island should be at least 15 feet in width, and the base shall be as high as the average water level and constructed with 10:1 side slopes.
- The tops of each island should be at least 6 feet in width, rise 3 - 4 feet above the base and have 4:1 side slopes. Where moderate wave action is a concern, 6:1 or 8:1 side slopes are acceptable.
- Fill shall be taken from the wetland immediately adjacent to the construction site or from an upland borrow area. Excavated borrow areas in the wetland should be no more than 1-2 feet deeper than the wetland bottom and have a 20:1 or gentler side slope.
- Topsoil should be removed from the borrow area and stockpiled for later use. Spread stockpiled

topsoil 4-6 inches deep across the surface of the island.

Seed islands to nesting cover according to UPLAND WILDLIFE HABITAT MANAGEMENT (645).

Submerged islands provide visual breaks within the basin and shallow flats interspersing open water with vegetation providing additional cover. Construct submerged islands that range 6"-18" below the anticipated water level. Dimensions and specifications shall follow those of nesting islands.



### Control of Cattails

Management guidelines are directed towards controlling cattails (*Typha* spp.) with the ultimate goal of providing food and cover for optimum production of wetland wildlife.

A point to note is that emergent marshes provide winter cover for resident birds and mammals, particularly in the agricultural region of the state. Therefore, consideration must be given to local and regional winter habitat conditions before undertaking cattail control measures.

As a general rule, cattail control is only recommended in wetlands of shallow (<12") or intermediate (12"-30") depths,  $\geq 20.0$  acres in size, and are 90 -100 percent choked with cattails. Cattail control in any given wetland should be limited to 50% of the cattail acreage or less.

Control may be achieved through one or a combination of the following methods;

- 1) **Water Level Manipulation** - where possible, water level manipulation is the most effective method for controlling cattails. Flood cattails to a depth of 24"-30" throughout the growing season.
- 2) **Biological (muskrats)** - muskrats are an effective biological control, however their usefulness is limited to the intermediate zone. Shallow zones routinely freeze to the bottom excluding muskrat activity.

- 3) **Mechanical (cutting or crushing)** - Cutting cattail stems below the water or on ice can be successful in both shallow and intermediate zones. Crushing and below water cutting should take place in late July. More permanent control is achieved when applied annually, or 3"- 6" of water is maintained over the cut/crushed stubble throughout the next growing season.
- 4) **Herbicides** - herbicides should be used as the method of last resort. Application may be difficult in the intermediate zone without specialized equipment. To optimize waterfowl use, flatten stems soon after they are dead. Always apply according to label directions.

These techniques should not be undertaken unless they are thoroughly evaluated by the landowner and guided by the local area wildlife manager. Also, biological, mechanical and chemical techniques can be applied with far superior results to wetlands, which possess a water control structure.

In certain instances, management intensive livestock grazing may be used to control cattails and other emergent wetland vegetation in the shallow zone. A detailed management plan is required.

For recommendations regarding control of other invasive aquatic species contact an NRCS biologist or the MDNR Area Wildlife Manager.

### Artificial Nesting Structures



Lowell Washburn

Apply this component to construct nest boxes, roost poles, loafing platforms, basking sites, and other artificial structures for wetland species.

Design, specifications and construction shall be consistent with plans included in MDNR publication "Woodworking For Wildlife: Homes For Birds and Mammals" (Biology Technical Note #6), Construction and Use of Duck Nest Structures" (Biology Technical Note #7) or other designs specified by a technical wildlife agency.

### OPERATION AND MAINTENANCE

An operation and maintenance plan shall be developed that is consistent with the purposes of this practice, its intended life, and the criteria for its design.

Actions will be carried out to ensure this practice functions as intended throughout its expected life. These actions include normal repetitive activities in the application and use of the practice (operation), and repair and upkeep of the practice (maintenance).

This practice will be inspected periodically and restored as needed, to maintain the stated purpose. Additional operation and maintenance requirements will be developed on a site specific basis to assure performance of the practice as intended.

The following activities should be addressed in the plan:

- Timing and level setting of water control structures required for establishment of desired hydrologic conditions or for management of vegetation;
- Inspection schedule of embankments and structures for damage assessment;
- Depth of sediment accumulation allowed before removal is required;
- Management needed to maintain vegetation, including control of unwanted vegetation; and
- Acceptable uses and timing (e.g. grazing and haying).

## WETLAND HABITAT MANAGEMENT - DESIGN WORKSHEET

### Structural Components Required

**Source of water:** (Check if required and see approved engineering design for site)

Diversion.  
 Pond/reservoir  
 Well with pump.  
 Pump.

Water control structure on tile line, ditch, or dike.  
 Other source to be developed  
 Surface water (Seasonal flood events and/or surface runoff is usually sufficient)

**Conditions Before :**

**Planned Conditions:**

**Cowardin Classification** \_\_\_\_\_

**Cowardin Classification** \_\_\_\_\_

### Considerations:

Wetland Permits  
 Utilities Notified  
 Impacts on Upstream and Downstream Landowners  
 Impacts on Threatened and Endangered Species

**Excavation required:** (see design for site)

Average depth \_\_\_\_\_ Average length \_\_\_\_\_ Average width \_\_\_\_\_ Total cubic yards \_\_\_\_\_

**Dikes required:** (see design for site)

Average height \_\_\_\_\_ Total length \_\_\_\_\_. Total cubic yards \_\_\_\_\_

**Mechanical Spillway requirements:** (see design for location)

Diameter \_\_\_\_\_ Total length \_\_\_\_\_ Materials \_\_\_\_\_

**Earthen Spillway requirements:** (see design for location)

Average width \_\_\_\_\_ Total length \_\_\_\_\_ Average depth \_\_\_\_\_

**Seeding Requirements:** (see standard Upland Wildlife Habitat Management - 645)

\_\_\_\_\_ Acres seeded

Seeding mixture:

**Islands:** (see design for site)

Number of islands \_\_\_\_\_ Average side slope \_\_\_\_\_ Average height \_\_\_\_\_ Total cubic yards \_\_\_\_\_

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**February 2001**

## Practice Specifications Approval and Completion Certification

**LANDOWNER/OPERATOR ACKNOWLEDGES:**

- a. They have received a copy of the specifications and understand the contents including the scope and location of the practice.
- b. They have obtained all necessary permits and/or rights in advance of practice application, and will comply with all ordinances and laws pertaining to the application of this practice.
- c. No changes will be made in the installation of the job without prior concurrence of the NRCS.
- d. Maintenance of the installed work is necessary for proper performance during the life of the practice. The practice life is \_\_\_\_\_.

**I have reviewed all specifications and agree to install as specified:**

Landowner/operator name and title (type or print):		
Landowner/operator Signature:		Date:
Landowner/operator name and title (type or print):		
Landowner/operator Signature:		Date:

***NRCS Review Only***

**DESIGN INSTALLATION AND LAYOUT APPROVAL:**

Designed By:	Date:	Job Approval Authority (JAA):
Approved By:	Date:	Job Approval Authority (JAA):

**RECORD OF COMPLETION AND CHECK OUT CERTIFICATION:**

Treated Acres:	Date Completed by Client:	Date Certified:

**Certification Statement:**

I certify that implementation of this conservation practice is complete, meets criteria for the stated purpose(s), and meets the NRCS conservation practice standard and specifications.

NRCS Signature:	Date:	Job Approval Authority (JAA):